

2. Descriptions of some new Lepidoptera from Kilima-njaro.
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[Received December 14, 1887.]

Examples of some of the species here described were collected by the late Bishop Hannington and of others by Mr. F. J. Jackson; in not a few cases specimens of the same species were obtained by both gentlemen.

RHOPALOCERA.

NYMPHALIDÆ.

EUPLOCINÆ.

1. AMAURIS HANNINGTONI, sp. n.

Primaries black, with pure white markings as in *A. egialea*, excepting that all the larger spots are reduced one third in size; secondaries dark brown, with a sharply defined oblong belt united by a short band to costa, from the abdominal margin to a little above the cell, sordid white; seven submarginal white spots, the relative sizes of which, reckoning from costa, are 4, 6, 5, 1, 2, 7, 3; two or three white dots nearer to the margin; under surface only differing from the upper surface as in the allied *A. egialea* and *A. hyalites*. Expanse of wings 81 millim.

Two males; Hills of Terta in April (*Hannington*).

ACRÆINÆ.

The female of *Acræa (Planema) johnstoni* of Godman was in the same collection and is evidently modified in imitation of the foregoing *Amauris*; it is black, with four white spots arranged obliquely in pairs and a dull white or yellowish belt across the secondaries as in the male; the receipt of this female is most interesting, as it is a clue to the position of the species, which is clearly seen to be allied to *A. (P.) lycoa* from the west coast; one example was received from the Hills of Terta, another between 3000–8000 feet on the slopes of Kilima-njaro in March.

2. PLANEMA MONTANA, sp. n.

♂. Allied to *P. aganice*, but differing in the bright orange-fulvous colour of the bands and in the greater width of the angulated band of primaries. Expanse of wings 68 millim.

Slopes of Kilima-njaro, 3000–5000 feet, in March (*Hannington*).

NYMPHALINÆ.

3. EURYPHENE VIOLACEA, sp. n.

♂ ♀. Allied to *E. neophron* of Hopffer (a common Zanzibar species), but differing in the purple instead of greenish-blue coloration of the upper surface, the narrower and duller orange-ochreous belt across the black apical half of primaries, and the more prominent

longer apical ochreous patch; on the under surface the ground-colour is suffused with yellow instead of with lilac, and the white markings are washed with yellowish; a distinctly dull yellow patch replacing the white spot at apex of primaries. Expanse of wings ♂ 70 millim.; ♀ 87 millim.

Slopes of Kilima-njaro, 3000–5000 feet, in March (*Hannington*).

This appears to be a fairly common species, it was also obtained by Mr. Jackson; but, unfortunately, his specimens were all more or less damaged by some larger insects, which got loose in the box and broke them on the way home.

Amongst other *Nymphalinae*, Mr. Jackson obtained *Eurytela dryope* and *E. ophione* and a *Neptis* allied to *N. melicerte* (two specimens of which from Zanzibar stand in the Hewitson collection along with the latter species).

4. NEPTIS GOOCHII, Trimen, var.

Nearly allied to *N. melicerte*, but the white discoidal patch of primaries reduced to a small spot near the end of the cell; the large discal spots wider, those of the upper patch placed less obliquely and therefore more compactly together; the belt of secondaries broader and with more convex inner edge; on the under surface the discoidal spot is large and fills the cell, but the other differences hold good. Expanse of wings 44 millim.

Kilima-njaro (*F. J. Jackson*).

The specimens from Zanzibar are smaller and the discoidal spot is a little larger than in the type; they represent the common form of the species.

PAPILIONIDÆ.

PIERINÆ.

Mr. Jackson obtained no less than eleven species of *Teracolus*, and Bishop Hannington two others, viz:—

Teracolus mutans. In the forests of Tiveta (*Hannington*).

— *aurigineus*. In the forests of Tiveta (*Hannington* and *Jackson*).

— *venustus*, sp. n. Kilima-njaro (*Jackson*).

— *chrysonome*, ♂ ♀. Kilima-njaro (*Hannington*)

— *calais*, ♂ ♀. Kilima-njaro (*Jackson*).

— *leo*, ♂ ♀. Forests of Tiveta (*Hannington* and *Jackson*).

— *miles*, ♂ ♀. Slopes of Kilima-njaro (*Hannington* and *Jackson*).

— *pseudacaste*, ♂. Slopes of Kilima-njaro (*Jackson*).

— *citreus*, ♂ ♀. Slopes of Kilima-njaro (*Jackson*).

— *incretus*, ♂ ♀. Forests of Tiveta (*Hannington* and *Jackson*).

— *antevippe*, ♂. Kilima-njaro (*Jackson*).

— *omphaloides*. Kilima-njaro (*Jackson*).

— *comptus*, sp. n. Kilima-njaro (*Jackson*).

In my monograph of *Teracolus* (P. Z. S. 1876), I placed *T. leo* as synonymous with *T. halimede* of Klug; my type was a faded and

somewhat worn male, received from the White Nile; the fresh specimens now in the collection prove me to have been wrong in doing so, the characters which distinguish the two forms being well marked and constant. In *T. leo* the saffron-yellow of the primaries extends only from the inner margin upwards to the first median branch, whereas in *T. halimede* it spreads to above the third branch; all the black markings are smaller and much more prominent in *T. leo*, but the female has a blackish bar across the cell of primaries, limiting the grey basal area; this sex also has the apex of primaries and the whole ground-colour of secondaries of a sandy-buff hue, the latter wings having a conspicuous white spot at the end of the cell and an unevenly arched series of brown spots across the disc; some females have no saffron-yellow on the upper surface.

The female of *T. miles* proves to be a black-and-white form, not unlike the white female of *T. pseudacaste*, but with less black above, the veins at apex of primaries below not blackened, and the secondaries buff instead of white; there is, however, a red-tipped female which, I think, belongs to the same species and which has the apex of primaries and ground-colour of the secondaries below sulphur-yellow. The female of *T. citreus* from Kilima-njaro is, on the upper-side, very like that sex of *T. topha*, but the black markings are reduced and more sharply defined; below it more nearly resembles *T. xanthevarne* ♀, the secondaries white with pale yellowish-brown markings and olive and black mottling as in *T. eucharis* ♀, but with a conspicuous brown-edged white discocellular spot.

The synonymy of *T. incretus* will, as I suspected, stand as follows:—

TERACOLUS INCRETUS.

♀. *Teracolus incretus*, Butler, Ent. Month. Mag. xviii. p. 146 (1881).

♂. *Callosune vulnerata*, Staudinger, Exot. Schmett. pl. 23. fig. 21 (1884).

Both sexes of this, the largest species of the *T. evarne* group, were obtained both by Bishop Hannington and Mr. Jackson; so that there is now no doubt of the correctness of my expressed opinion that *C. vulnerata* would prove to be the male of my species; the figure by Staudinger is poor, the colouring of the secondaries being exaggerated and the black bordering of the primaries incorrectly drawn, still it is as good as the majority of the illustrations in this book, which (whatever its faults may be) has the merit of being cheap. As with other species of the *T. evarne* group, a white form of the female is by no means uncommon; it is a little smaller than the yellow female and, excepting in its superior size and in the details of marking on the under surface, greatly resembles that sex of *T. topha*.

The male, on the under surface, is extremely variable; indeed no two specimens are alike; the following may be noted:—

a. Secondaries below whitish sulphur, excepting at the borders, which are pure sulphur-yellow; a minute dusky costal spot, dark

brown discocellular spot with white pupil, and six minute black marginal dots between the veins.

b. Secondaries below sulphur-yellow throughout, two additional brown spots, on the interno-median and second median interspaces.

c. Secondaries below flesh-pink with yellowish margins, the whole surface mottled with indistinct olive spots, a dusky longitudinal streak through the cell; other markings as in var. *a*, but less distinct.

d. Secondaries inclining to ferruginous excepting towards apex, where the ground-tint is yellow, a yellowish streak above a black-mottled dusky longitudinal streak through the cell; the whole remaining surface mottled with olive and black; other markings as in var. *b*, but larger.

In addition to the above modifications, the black border on the upper surface of the primaries varies both in width and length; but its inner edge is always more or less dentate-sinuated.

5. TERACOLUS VENUSTUS, sp. n.

♂. Above like a small specimen of *T. aurigineus*, but with narrow external black borders to the wings, a smaller spot at the end of the discoidal cell of primaries, and the black band of secondaries terminating at third median branch; below it also differs in having the apex and outer border of primaries and ground-colour of secondaries sandy buff instead of sulphur-yellow. Expanse of wings 36 millim.

Kilima-njaro (*F. J. Jackson*).

Allied to the preceding is a species of which we have received no less than nine specimens from Somali-land, but which, from an omission to examine them individually, I confounded with the *T. chrysonome* of Klug; I describe it as follows:—

TERACOLUS HELVOLUS, sp. n.

Nearly allied to *T. chrysonome*, the wings a little shorter and smaller; the indication of a band across the secondaries much more decided; the discal zigzag band of primaries below ending in a black spot; the apex and outer border of primaries and entire ground-colour of secondaries on the under surface flesh-pink instead of sulphur-yellow. Expanse of wings 33–35 millim.

T. chrysonome measures 40–44 millim. in expanse; it is a wider-ranging species than *T. helvolus*, which is probably restricted to Somali-land.

6. TERACOLUS COMPTUS, sp. n.

Nearly allied to *T. antigone*, which we have in both sexes from Accra, but larger, the wings decidedly longer, the black external border of primaries narrower; the black spots of secondaries much smaller; the internal band on the male more or less prominent, more so than in our specimen of *T. antigone*, in both males before me; the orange apical patch of the male broader and not so red; the black apical patch in the female connected by a line of black

scales with the internal band, which is much darker than in *T. antigone*; the cell, however, is not suffused with grey at the base as in that species; costal band much blacker; marginal spots smaller towards anal angle. Expanse of wings 38 millim.

Kilima-njaro (*F. J. Jackson*).

Before proceeding to another genus I think it will be useful to refer to two species described by Herr Aurivillius in the 'Öfversigt Kongl. Vetensk.-Akad. Forhandl.' for 1879, in a memoir on the Lepidoptera of Damara-land.

The first of these is described as *Callosune deidamioides* and is, I believe, only a slight variety of *C. eveninus*, which varies considerably in the very characters used for discriminating *C. deidamioides*.

The second is named *C. damarensis*; it answers perfectly to some of the male specimens of my *T. ignifer*, var., and I do not doubt its identity with that form; it may be a good species, but the points which separate it from typical *T. ignifer* are very slight, the principal distinction being the piuker tint of the under surface of the secondaries.

7. MYLOTHRIS NARCISSUS, sp. n.

Nearest to *M. trimenia*, of the same colours, but the primaries quite distinct in pattern, the base being broadly black (to the middle of the discoidal cell) in the male and dark brown in the female; the costal margin black; apical black border and marginal spots of male fully three times as broad as in *M. trimenia*; in the female there is a broad dark brown external border tapering on the costal margin, its inner edge acutely tridentate on the median branches and its posterior termination, obtusely pointed, extending one third towards the base; first marginal black spot of secondaries enlarged in both sexes, but especially in the male, other spots smaller than in *M. trimenia*: on the under surface the apex of primaries and entire surface of secondaries are sulphur-yellow in the male and chrome-yellow in the female, not gamboge-yellow as in the S.-African insect; there are also no black marginal spots on the primaries and those of the secondaries are smaller. Expanse of wings ♂ 53 millim., ♀ 54 millim.

Forests of Tiveta (*Hannington*).

The costal margin of the primaries is noticeably shorter in this species than in *M. trimenia*.

Mr. Jackson obtained a species of *Terias* allied to *T. chalcomiæta*, or perhaps that species; it is not absolutely constant in pattern, and some examples differ so little from the common type of Aden that I am unwilling to separate it. As it has been suggested to me that *T. chalcomiæta* is "only a variety" of *T. hecabe*, I may say once for all that the phrase is utterly unintelligible to me; there is only one *Terias* (to my knowledge) in Aden, and it is about as unlike *T. hecabe* as any two species of *Terias* can well be. Undoubtedly we have the strongest evidence that there once was only one *Terias* and that all the species now existing are local races or climatic forms of

that probably long extinct type; but to associate, as one, all the species or half the species now existing, is to hinder the study of the genus. Those Lepidopterists who, professing to believe in evolution, practically deny its existence, inasmuch as they associate nearly all allied forms under one specific name, are constantly getting into difficulties; so much perplexed are they as to whether they shall call a new form a "species" or a "variety," that they will even speak of it as "more or less synonymous" with something previously described.

8. *HERPÆNIA ITERATA*, sp. n.

Nearest to *H. melanarge* of Somali-land, but constantly considerably larger, the white marginal spots of secondaries larger, the subbasal black belt broader. Expanse of wings 55 millim.

Kilima-njaro (*F. J. Jackson*).

Although the distinction between this form and *H. melanarge* is chiefly one of size (the latter expanding only 44 millim.) the constancy of this character in my opinion constitutes it a separate species and entitles it to a name of its own.

Mr. Jackson obtained *Nepheronia argia*, the male in every respect identical with examples from Sierra Leone, the female nearest to the variety named *N. poppea*, but differing above as follows:—the patch at base of primaries vermilion-red; the outer border narrower and enclosing a large white subapical spot; the secondaries with five somewhat diffused marginal dark brown spots.

I may be deemed inconsistent for not naming the foregoing form; but as only one example has come to hand, and the females of *N. argia* are known to be extremely variable, I do not believe that I have anything before me but an individual sport (*i. e.* a variety).

Dr. Boisduval, after describing the yellow female under the name of *Pieris idotea*, concludes by saying—"Nous n'avons pas vu la femelle."

9. *ERONIA DILATATA*, sp. n.

Nearly allied to *E. cleodora*, the apical area of primaries above always marked with two and sometimes with three white spots; secondaries almost invariably with a broader external border, often twice the width of that of *E. cleodora*; below, the yellow patch on the apical area of primaries and the ground-colour of the secondaries are paler than in *E. cleodora*, lemon-yellow instead of saffron; the outer border of secondaries is invariably much wider, and the other markings are comparatively shorter and broader than in the southern form. Expanse of wings 62–71 millim.

♂. Taveta, 2000–3000 feet, in dense forest (*H. H. Johnston*); ♂, ♀. Forests of Taveta (*Bishop Hannington*); Kilima-njaro (*F. J. Jackson*).

As will be seen from the above description, the only satisfactory distinguishing characters in *E. dilatata* are the different yellow colour and much wider border to secondaries on the under surface;

but after examination of a good series of specimens I have come to the conclusion that these characters are constant.

Mr. Jackson obtained three species of *Papilio*,—*P. philonoë* and *P. constantinus* of Ward and *P. ophidicephalus* of Oberthür: the last mentioned does not differ from the southern type.

HESPERIIDÆ.

Hesperia keithloa and *H. bixæ* were obtained; also *Chatoeneme cerymica*, one or two obscure little species which have probably been named by Monsieur Mabille or Herr Plötz, and the following:—

10. PLESIONEURA BISERIATA.

Nearest to *P. galenus*, a little larger; primaries with the same pattern, but the spot on basal area smaller; secondaries with two distinct sinuous series of orange spots, the inner series consisting of seven spots, of which the second is large and diamond-shaped; the third and seventh reduced to mere points; outer series consisting of five decreasing spots, the first and largest bifid and touching the outer margin; fringe orange, divided by black lines at the extremities of the veins; discoidal spot indistinct; secondaries below paler than above, but similar in pattern; in other respects this species agrees with *P. galenus*. Expanse of wings 43 millim.

Kilima-njaro (*F. J. Jackson*).

HETEROCERA.

Allopus hirundo appears to be the common Hawk-moth; Mr. Jackson brought home six or seven specimens, but unfortunately these and many others of his moths got more or less broken, owing to some beetles getting loose and rattling about amongst them: the following, however, fortunately came to hand in splendid condition.

ARCTIIDÆ.

CHARIDEINÆ.

11. POMPOSTOLA SMARAGDINA, sp. n.

Wings blue-black, the basal fifth and the costal border to the end of the cell mottled with brilliant metallic emerald-green spots and dashes; two cuneiform spots, confluent behind, within the cell, the inner one metallic green, the outer one hyaline white, richly glossed with emerald-green; a quadrate green-glossed hyaline spot immediately beyond the cell; a long oblique tapering green-glossed hyaline streak from the median vein just below the double discoidal spot almost to the external angle; in some specimens, however, this streak is widely interrupted in the middle, leaving only two small spots; a subcostal metallic green streak, from the centre of which a transverse irregular green-glossed hyaline band runs almost to outer margin at about apical fourth; costal border of secondaries rufous brown; a small hyaline white subcostal spot, followed by a

metallic emerald-green streak; an oblique cuneiform trifold green-glossed hyaline-white spot across the middle, two large patches almost filling the interno-median and the abdominal areoles, and a minute spot near outer margin on the second median interspace; thorax blue-black, frons and vertex of head metallic emerald-green; collar above with two large spots of metallic golden green, a triangular dorsal spot of the same colour; posterior half of patagia metallic fiery copper; metathorax and the two basal segments of abdomen metallic golden green: the two following segments deep brick-red edged with black; remaining segments blue-black, banded in front with metallic emerald-green; primaries below purplish towards the base, otherwise nearly as above; secondaries with a broad metallic-green costal stripe from base to apex; pectus bronze-brown sprinkled with metallic-green scales; legs blackish brown, the coxæ of the first pair and the tibix of the other pairs with a large white spot; venter blue-black, with two unequal central white spots. Expanse of wings 32-41 millim.

Slopes of Kilima-njaro (*F. J. Jackson* and *Bishop Hannington*).

The examples collected by Bishop Hannington are smaller and have the markings on their wings smaller and narrower than in the type collected by Mr. Jackson.

LITHOSIIDÆ.

12. LEPISTA LIMBATA.

Near to *L. pandula*, Boisd. (*Dyphlebia trimenii*, Feld.); larger, of a deeper orange-ochreous colour: the black border wider, that of primaries occupying two fifths instead of less than one third of the external area, its inner edge more oblique, that of secondaries about one third wider. Expanse of wings 24 millim.

Kilima-njaro (*F. J. Jackson*).

We have *L. pandula* from Delagoa Bay.

Two interesting species of *Chalcosiidæ* collected by Mr. Jackson have been separately described. Of the *Liparidæ* one species, *Aroa discalis*, Walk., is in the collection; hitherto we have only received it from the Cape and Natal. Amongst the Noctuites *Eurhipia bowkeri* and *Asymbata roseiventris*, or species scarcely distinguishable from the latter, were obtained, as also the handsome but common *Hypopyra capensis*.

3. On certain points in the Visceral Anatomy of the Lacertilia, particularly of *Monitor*. By FRANK E. BEDDARD, M.A., Prosector to the Society, Lecturer on Biology at Guy's Hospital.

[Received February 7, 1888.]

The present paper contains the results of some investigations into the visceral anatomy of the Lacertilia; the specimens were in every